

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended): A composite material, which comprises two or more components of which one is super-porous polysaccharide (main component) which outside the ~~super-pores~~ super-pores contains a gel phase with micro-pores and the other component(s) (secondary component(s)) are different from the main component with exception of the case that the composite contains an electrically monolithic secondary component which is intended to be, or is connected between two electrodes, wherein said main component is in the shape of discrete particles or a continuous structure, and wherein at least one of said secondary components is present in both the super-pores and in the gel phase.

Claim 2 (cancelled)

Claim 3 (previously amended): The composite material of claim 1, wherein at least one of the secondary components is outside the super-pores but inside the main component's gel phase.

Claim 4 (previously amended): The composite material of claim 1, wherein at least one of the secondary components is in the super-pores of the main components.

Claim 5 (cancelled)

Claim 6 (previously amended): The composite of claim 1, wherein it has at least one affinity ligand.

Claim 7 (previously amended): The composite material of claim 6, wherein the respective affinity ligand is linked to the main component and/or to one or more secondary components.

Claim 8 (previously amended): The composite material of claim 6, wherein at least one of the affinity ligands is linked to the main component.

Claim 9 (previously amended): The composite material of claim 6, wherein at least one of the affinity ligands is connected to one of the secondary components.

Claim 10 (previously amended): The composite material of claim 6, wherein said at least one of the affinity ligands is an ion exchange group, amphoteric group, chelating group,

bio affine group, a group which can be used in covalent chromatography, a group which gives  $\pi$ -interaction, a group which can be used during hydrophobic interactions chromatography, a group which give thiophilic interactions, or an affinity binding inorganic material which is a secondary component.

Claim 11 (previously amended): The composite material of claim 1, wherein the secondary components are porous with average pore diameters which are greater than the average pore diameters in the gel phase of the main component.

Claim 12 (previously amended): The composite material of claim 1, wherein it is in the shape of fibres, beads, or a monolith

Claims 13–16 (cancelled)

Claim 17 (previously amended): In a method for the chemical synthesis of a polymer on a solid phase, wherein said synthesis includes the binding of said polymer to said solid phase, wherein the improvement comprises using, as the solid phase, the composite material which is defined in claim 1.

Claim 18 (previously amended): In a method for performing enzymatic/catalytic reactions in a bio-reactor, which method requires binding said enzyme or catalyst to a

composite material, the improvement comprising using the composite material of claim 1.

Claim 19 (previously amended): In a method for culturing of cells, which method includes culturing said cells on a valid support, the improvement comprising using as said solid support, the composite material of claim 1.

Claim 20 (withdrawn): A separation method comprising that a solution containing substances that are to be separated are passed through a bed containing a separation material, said method being based on affinity between a substance to be separated and a ligand bound to the separation material or on differences in shape or in molecular weights of the substances to be separated, characterized in that said material is a composite material comprising two or more components of which one is super-porous polysaccharide (main component) which outside the superpores contains a gel phase with micro-pores and the other component(s) (secondary component(s)) are different from the main component.

Claim 21 (withdrawn): The separation method of Claim 20, characterized in that the main component is in the form of discrete particles or of a continuous structure.

Claim 22 (withdrawn): The separation method of Claim 20, characterized in that at least one of the secondary components is within the super-pores of the main component.

Claim 23 (withdrawn): The separation method of Claim 20, characterized in that at least one of the secondary components is present in both the super-pores and in the gel phase of the main component.

Claim 24 (withdrawn): The method of Claim 20, characterized in that the affinity ligand is selected amongst ion exchange groups, amphoteric groups, chelating groups, bio-affine groups, groups which can be used in covalent chromatography, groups which gives  $\pi$ - $\pi$ -interaction, groups which can be used during hydrophobic interaction chromatography, groups which give thiophilic interactions, or affinity binding inorganic materials which can be present as a secondary component, such as hydroxyapatite.

Claim 25 (withdrawn): The separation method of Claim 20, characterized in that said composite material is in the form of particles.

Claim 26 (withdrawn): The separation method of Claim 25, characterized in that said particles are in the form of a packed bed or a fluidized bed.

Claim 27 (withdrawn): The separation method of Claim 20, characterized in that said composite material is in the form of a monolith.

Claim 28 (withdrawn): The separation method of Claim 20, characterized in that the composite material carries an affinity ligand and that the substance after the solution has passed through the bed is desorbed from the composite material by the use of a solution containing a desorbing agent.

Claim 29 (withdrawn): The separation method of Claim 28, characterized in that the desorbing agent gives an increased ionic strength, a change in pH or competes with the bonding between the substance and the affinity ligand.

Claim 30 (withdrawn): The separation method of Claim 20, characterized in that the combination of electroelution of a bound substance from the composite material with a composite material comprising a monolithic electrically conducting secondary component is excluded.

Claim 31 (new): The composite of claim 1, wherein said main component is agarose.

Claim 32 (new): The composite of claim 1, wherein one of said secondary components is agarose.